

Remarks/Arguments

I. Status of the Claims

In the non-final Office Action, the Examiner indicated that claims 1, 3-18, 35 and 40-42 are pending, and rejected claims 1, 3-18, 35 and 40-42 variously under 35 U.S.C. §103(a).

In this Amendment, claims 1, 3-18, 35 and 40 are canceled. Hence the various rejections of these claims are moot. In total, claims 1-40 stand canceled (claims 2, 19-34 and 36-39 were previously canceled).

Also in this Amendment, new claims 43-50 are added to better define the invention.

New claims 43 and 44 depend indirectly from previously presented independent claim 41 which is directed to the “**precipitated**” surfactant embodiments of the present invention. These new dependent claims (i.e., claims 43 and 44) include limitations relating to the pH of the self-cleaning colloidal slurry composition that causes the surfactant to precipitate.

New independent claim 45 is directed to the “**adsorbed**” surfactant embodiments of the present invention, and new claims 46-49 depend therefrom. This new independent claim (i.e., claim 45) more clearly defines these embodiments of the present invention by positively reciting “an aluminosilicate glass substrate”, “colloidal silica particles” having “a nominal size of approximately 2 - 200 nm”, “metal etchant” comprising “Ce⁺⁴ and Fe⁺³ ions”, “ethylene oxide propylene oxide block copolymer surfactant”, and the self-cleaning slurry composition has “a pH of approximately 0 to 4”.

Finally, new independent claim 50 is directed to the **“textured surface”** embodiments of the present invention. This new independent claim more clearly defines these embodiments of the present invention by positively reciting “an aluminosilicate glass substrate”, “colloidal silica particles” having “a nominal size of approximately 70 - 200 nm”, “metal etchant” comprising “Ce+4 and Fe+3 ions”, “ethylene oxide propylene oxide block copolymer surfactant”, and the self-cleaning slurry composition has “a pH of approximately 0 to 4”.

Claims 41-50 are pending for reconsideration.

II. Rejection of Claims 41 and 42 Under 35 U.S.C. §103(a)

At page 9 of the non-final Office Action, claims 41 and 42 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hartog et al. (U.S. Patent No. 6,236,542) in view of Roberts (U.S. Patent No. 5,723,181).

Initially, the Applicants respectfully submit that it is unclear if this rejection is additionally somehow based on Kramer (U.S. Patent No. 6,630,403) because the text of the rejection refers to paragraph 5 of the non-final Office Action, which paragraph 5 is directed to a rejection that incorporates the Kramer patent as a secondary reference. In responding to this rejection, it is assumed that this rejection is not based on the Kramer patent. The Examiner, however, is requested to clarify this issue.

The Applicants respectfully submit that the Hartog et al. and Roberts references, alone and in combination, fail to disclose or suggest the invention as recited in claims 41 and 42.

Independent claim 41 requires specific interaction between a surfactant and a substrate that is a glass disk substrate, a ceramic disk substrate, or a glass-ceramic disk substrate for use in a data storage device. The specific interaction claimed is that the surfactant is precipitated onto a surface of at least one of the substrate and the colloidal particles, and that the surfactant has a hydrophobic section that forms a steric hindrance barrier between the substrate and the colloidal particles.

Hence independent claim 41 requires the surfactant to be precipitated on a surface of the substrate and/or colloidal particles. The Hartog et al. reference does not disclose or suggest that the surfactant is precipitated on a surface of the substrate and/or colloidal particles. The Roberts reference does not cure this or other deficiencies in the Hartog et al. reference discussed above. The Roberts reference is cited for its alleged teaching that “surfactant such as sodium octyl sulfate is used in a colloidal silica composition for changing the surface chemistry and resulted surface is more susceptible to the surface processing (col. 1, lines 49-60 and col. 2, lines 46-53).” However, the Roberts reference, like the Hartog et al. reference, fails to disclose or suggest that the surfactant is precipitated onto as surface of the substrate and/or colloidal particles.

Precipitation of the surfactant onto the surface of the substrate and/or colloidal particles is dependent of a number of factors, including surfactant type, the pH of the self-cleaning slurry composition, and the identity of the substrate and/or colloid. For precipitation to occur, the pH of the self-cleaning composition must be around or lower than the isoelectric point of the substrate and/or colloid. In fact, the precipitated surfactant is removed during a subsequent cleaning process with a change in the pH to greater than the isoelectric point of the substrate and/or colloid. See, for example, the discussion of precipitating an anionic surfactant on the substrate and/or colloidal surfaces at page 22, line 24 through page 23, line 2 of the present application.

Moreover, the Roberts reference actually teaches away from the claimed invention as it purports to relate to hydrophilizing compositions based on aqueous colloidal silica in combination with zirconyl salts, and, also, to their application to hydrophobic surfaces to render the surface hydrophilic. See, Roberts, col. 1, lines 6-9 and col. 2, lines 45-52. Hence, the Roberts reference would lead one skilled in the art away from changing the glass surface to a hydrophobic character (i.e., the opposite of hydrophilic). See, for example, the discussion of changing a glass surface to a hydrophobic character in water at page 24, lines 16-26 of the present application. In this regard, claim 41 recites “the surfactant having a hydrophobic section that forms a steric hindrance barrier between the substrate and the colloidal particles”.

The teaching or suggestion to make the claimed modification and the reasonable expectation of success must be found in the prior art, not applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). With regard to independent claim 41, the appellant respectfully submits that the teaching or suggestion to make the claimed modification and the reasonable expectation of success are based on impermissible hindsight gleaned from the appellant’s disclosure, not the prior art. It is improper to use the inventor’s patent application as an instruction book on how to reconstruct the prior art. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1 USPQ2d 1593 (Fed. Cir. 1987).

Therefore, the Applicants respectfully request reconsideration and withdrawal of this rejection of still pending claims 41 and 42 under §103(a).

III. Conclusion

In view of the foregoing comments, the Applicants respectfully submit that all of the pending claims (i.e., claims 41-50) are in condition for allowance and that the application should be passed to issue.

If a conference would be of value in expediting the prosecution of this application, the Examiner is hereby encouraged to telephone the undersigned counsel at (847) 462-1937 to arrange for such a conference.

Respectfully submitted,

By: 

Matthew J. Bussan
Registration No.: 33,614
1048 Dove Way
Cary, Illinois 60013

Telephone: (847) 462-1937
Fax No.: (847) 462-1937